

CLAIMS

1. A rotation control device for a working machine, the device comprising:
an electric motor for rotatably driving a rotating body; operation means for issuing a rotation command for rotation of the rotating body; control means for controlling said electric motor based on the rotation command issued from said operation means; a rotating speed detecting means for detecting a rotating speed of the rotating body; and a mechanical brake for generating mechanical braking force, wherein said control means has a neutral range set by adding a predetermined width to an absolute neutral point serving as a basic point, the absolute neutral point corresponding to an operation amount of said operation means of zero, and in said neutral range, a mechanical brake zone is set on the absolute neutral point side, while a position holding control zone is set on a side opposite to said neutral point side, and wherein said control means is adapted to cause said mechanical brake to work in the mechanical brake zone of said neutral range, to perform position holding control in said position holding control zone, thereby stopping and holding said rotating body, and to perform speed control according to the operation amount of said operation means outside the neutral range.
2. The rotation control device for the working machine according to claim 1, wherein a simultaneous use zone where the mechanical brake zone and the position holding control zone are partially superimposed on each other is set in the neutral range, and wherein said control means causes both functions of the mechanical brake and the position holding control to be carried out in the simultaneous use zone.

3. The rotation control device for the working machine according to claim 1 or claim 2, wherein, in decelerating rotation, when the operation amount of the operation means is within said position holding control zone and the rotating speed is equal to or less than a preset starting speed of a speed when the position holding control starts, said control means starts to perform the position holding control.

4. The rotation control device for the working machine according to any one of claims 1 to 3, wherein, in decelerating rotation, when the operation amount of the operation means is within said mechanical brake zone and a condition in which the rotating speed is equal to or less than a preset brake operating speed continues for a set period of time, said control means actuates the mechanical brake.

5. A rotation control device for a working machine, the device comprising: an electric motor for rotatably driving a rotating body; operation means for issuing a rotation command for rotation of the rotating body; control means for controlling said electric motor based on the rotation command issued from said operation means; and a rotating speed detecting means for detecting a rotating speed of the rotating body, said control means performing speed control according to an operation amount of said operation means and imposing a limitation on a maximum value of accelerating torque according to said operation amount, wherein, when said operation means is positioned within a preset neutral range, said control means is adapted to perform position holding control of said rotating body, to store torque generated in said electric motor by the position holding control as on-the-spot holding torque, and to set, in accelerating the rotation, the

higher of said on-the-spot holding torque stored and said accelerating torque produced according to the operation amount of said operation means, as electric motor torque for acceleration.

6. The rotation control device for the working machine according to claim 5, wherein, in decelerating the rotation, said control means calculates braking torque according to the operation amount of said operation means based on preset braking torque characteristics, and sets the higher of said calculated braking torque and said on-the-spot holding torque stored, as electric motor torque for deceleration.

7. The rotation control device for the working machine according to claim 5 or claim 6, wherein, when the operation means is returned within the neutral range and the position holding control is performed, said control means restores the on-the-spot holding torque stored to an initial value.

8. The rotation control device for the working machine according to any one of claims 5 to 7, further including a mechanical brake for generating mechanical braking force, wherein, when the operation mean is positioned in a mechanical brake zone which is a part of the neutral range and includes an absolute neutral point, said control means actuates said mechanical brake.

9. A rotation control device for a working machine, the device comprising: an electric motor for rotatably driving a rotating body; operation means for issuing a rotation command for rotation of the rotating body; control means for controlling said electric motor based on the rotation command issued from said operation means; and rotating speed detecting means for detecting a rotating speed of the rotating body, said control means

performing speed control according to an operation amount of said operation means, wherein, when performing a pressing work including pressing a part of said rotating body against an object of work, said control means performs torque control according to the operation amount of said operation means instead of said speed control.

10. A rotation control device for a working machine, the device comprising: an electric motor for rotatably driving a rotating body; operation means for issuing a rotation command for rotation of the rotating body; control means for controlling said electric motor based on the rotation command issued from said operation means; and a rotating speed detecting means for detecting a rotating speed of the rotating body, said control means performing speed control according to an operation amount of said operation means, wherein, when performing a pressing work including pressing a part of said rotating body against an object of work, said control means performs control to impose a torque limitation according to the operation amount of the operation means on said speed control.

11. The rotation control device for the working machine according to claim 9 or claim 10, wherein, in a condition the operation amount of said operation means is larger than an operation amount thereof at a starting position of the rotation and an actually measured value of the rotating speed is zero, or is equal to or less than a set value near zero, said control means judges the condition the pressing work.

12. A rotation control device of a working machine, the device comprising: an electric motor for rotatably driving a rotating body; operation means for issuing a rotation command for rotation of the rotating body; control means

for controlling said electric motor based on the rotation command issued from said operation means; and a rotating speed detecting means for detecting a rotating speed of the rotating body, said control means performing speed control according to an operation amount of said operation means, wherein, when an actually measured value of the rotating speed is smaller than a target value corresponding to the operation amount of said operation means, said control means performs control to impose a torque limitation on said speed control.

13. The rotation control device for the working machine according to any one of claims 9 to 12, wherein, under condition that the operation means is located at the starting position of the rotation, a target torque is set to be above zero.